

FIG. 1 (PRIOR ART)

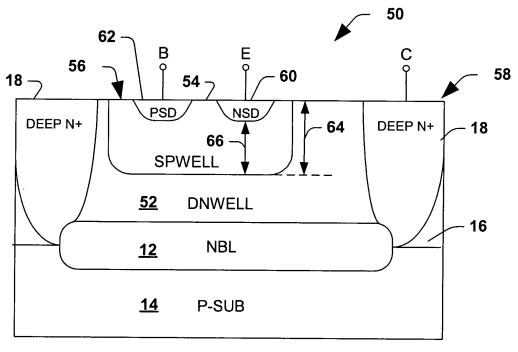
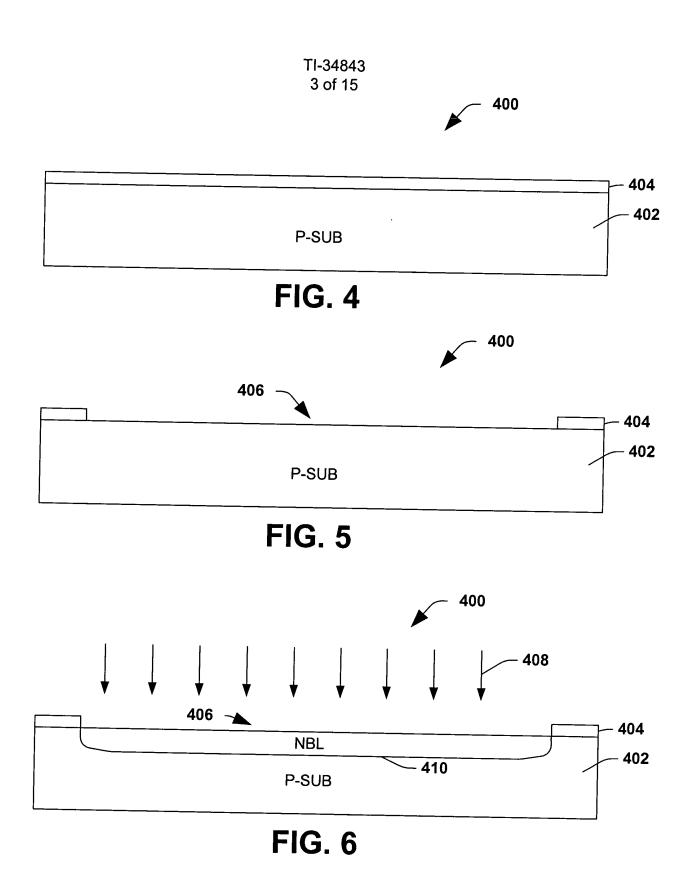
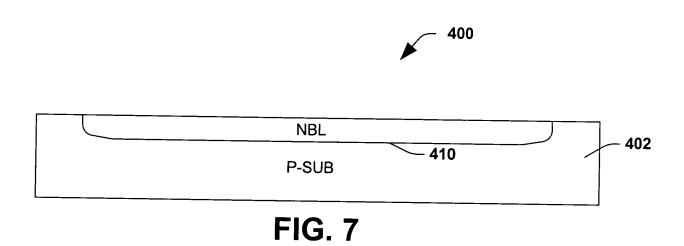


FIG. 2 (PRIOR ART)

TI-34843 2 of 15	
FORM FIRST MASKING MATERIAL OVER SUBSTRATE	<b>— 30</b>
PATTERN FIRST MASKING MATERIAL	30
PERFORM FIRST IMPLANT TO FORM NBL	30
REMOVE RESIDUAL FIRST MASKING MATERIAL	,   30
FORM P-EPI LAYER OVER SUBSTRATE	31
FORM SECOND MASKING MATERIAL OVER P-EPI LAYER	31
PATTERN SECOND MASKING MATERIAL	31
PERFORM SECOND IMPLANT TO FORM DNWELL	31
REMOVE RESIDUAL SECOND MASKING MATERIAL	31
FORM THIRD MASKING MATERIAL OVER P-EPI LAYER	320
PATTERN THIRD MASKING MATERIAL	32
PERFORM THIRD IMPLANT TO FORM DEEP N+ REGIONS	32
REMOVE RESIDUAL THIRD MASKING MATERIAL	32
FORM FOURTH MASKING LAYER OVER P-EPI LAYER	<b>— 32</b>
PATTERN FOURTH MASKING MATERIAL	33
PERFORM FOURTH IMPLANT TO ESTABLISH P-TYPE BODY	33
PERFORM FIFTH IMPLANT TO ESTABLISH N-TYPE SURFACE LAYER	33
REMOVE RESIDUAL FOURTH MASKING MATERIAL	33
FIELD OXIDATION	33
FORM AND PATTERN FIFTH MASKING LAYER	34
PERFORM SIXTH IMPLANT TO ESTABLISH SPWELL	342
REMOVE RESIDUAL FIFTH MASKING MATERIAL	344
FORM OXIDE LAYER	340
PATTERN OXIDE LAYER	348
FORM POLY-SILICON LAYER	350
PATTERN POLY-SILICON LAYER	352
PERFORM PSD/NSD IMPLANTS	354
PERFORM ANNEAL TO ESTABLISH EMITTER VIA DIFFUSION	<u> </u>



TI-34843 4 of 15





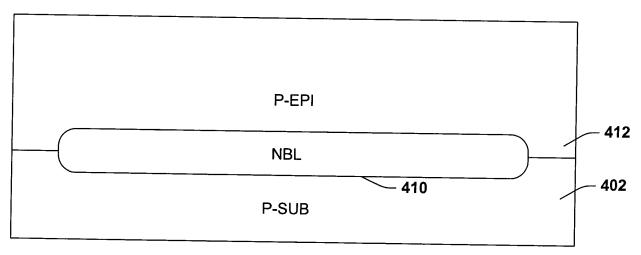


FIG. 8

TI-34843 5 of 15

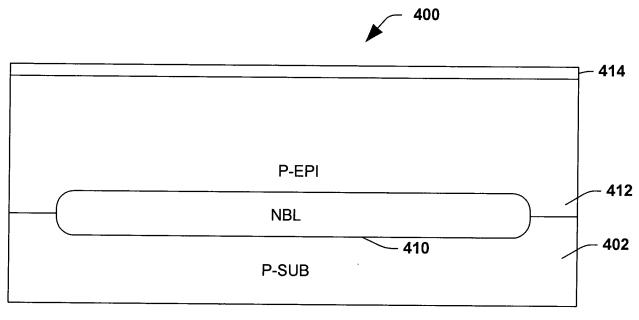


FIG. 9

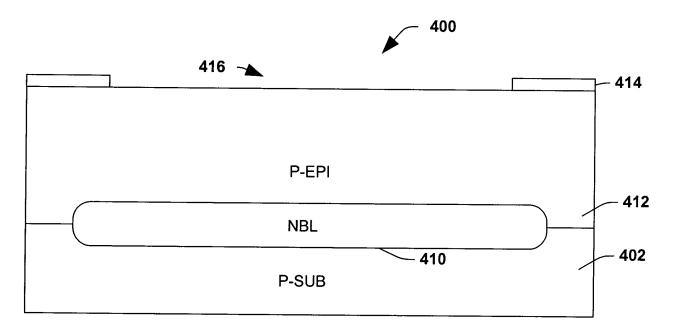
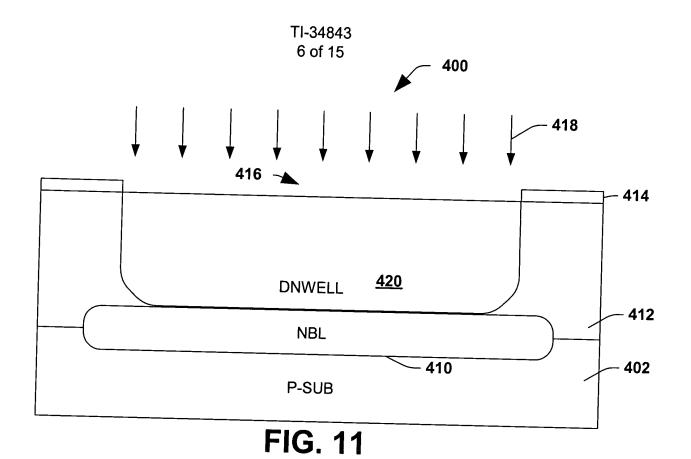
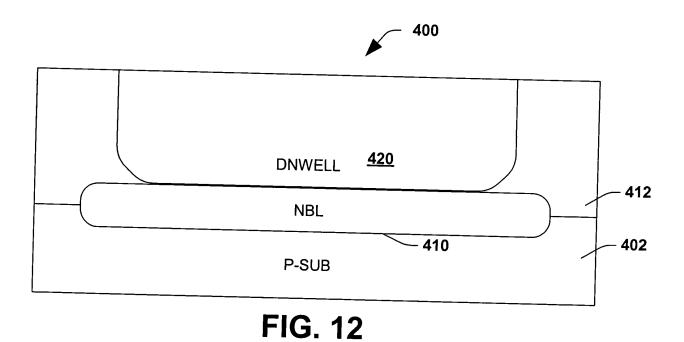


FIG. 10





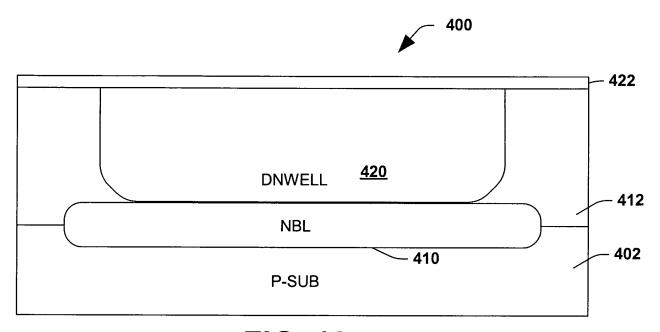


FIG. 13

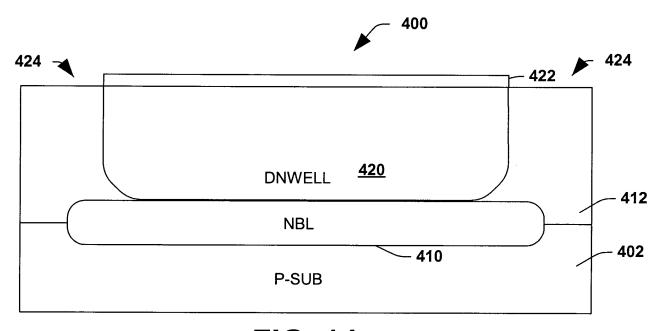
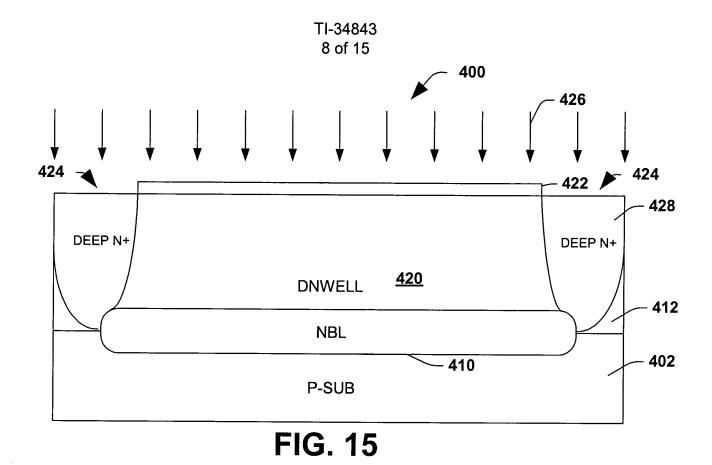
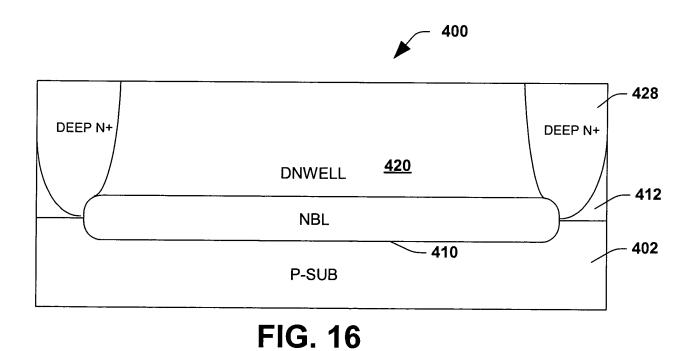


FIG. 14





TI-34843 9 of 15

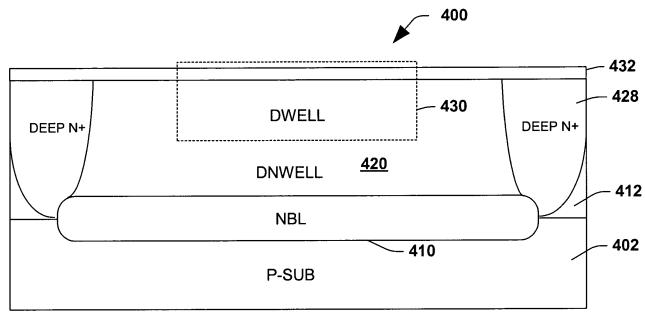


FIG. 17

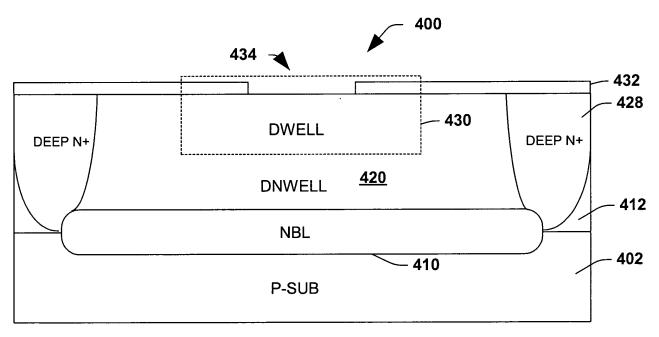


FIG. 18

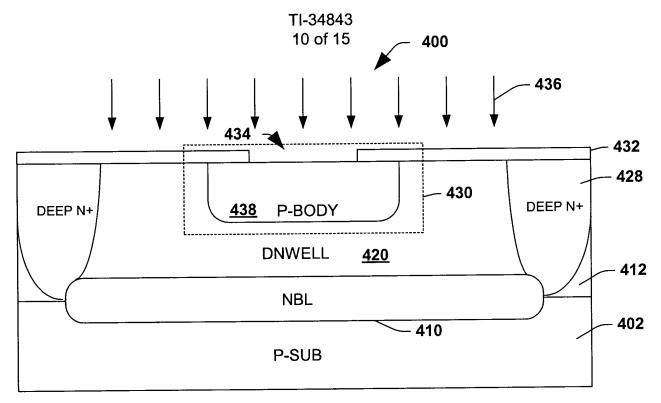


FIG. 19

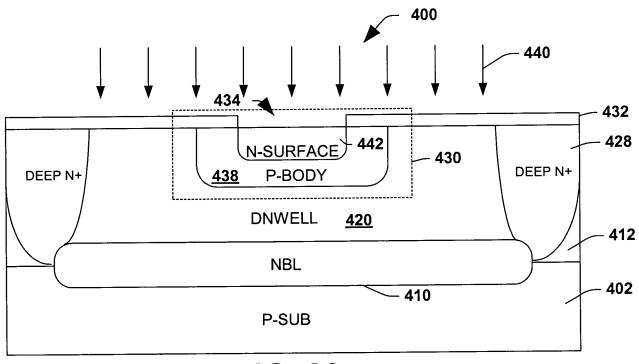
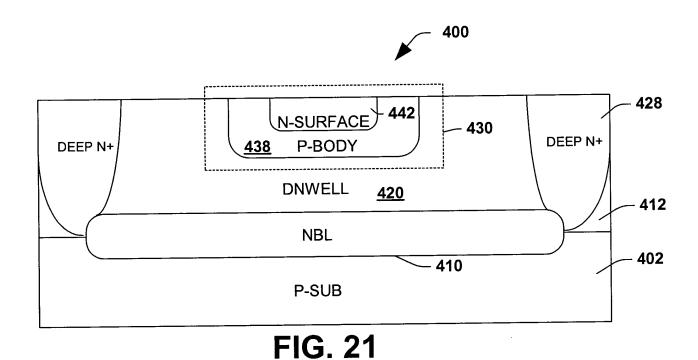
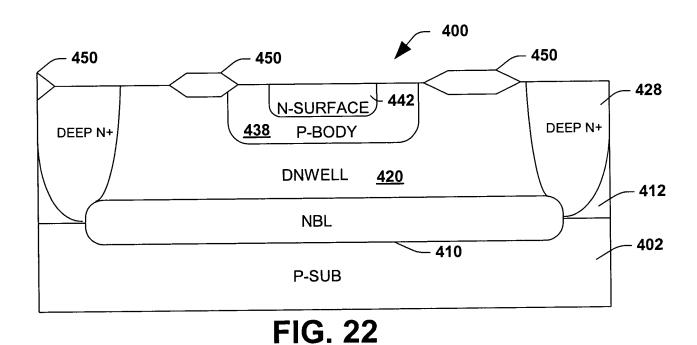


FIG. 20

TI-34843 11 of 15





TI-34843 12 of 15

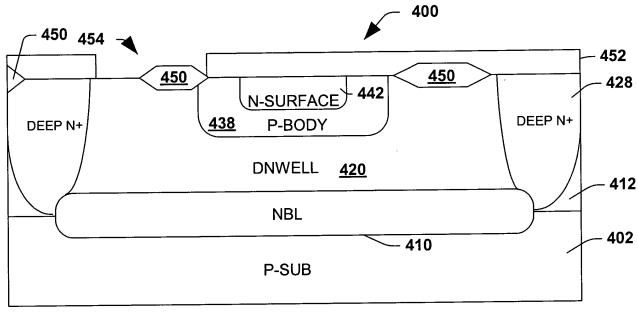


FIG. 23

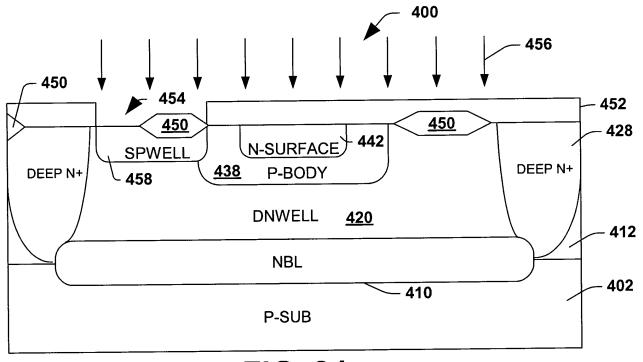


FIG. 24

TI-34843 13 of 15

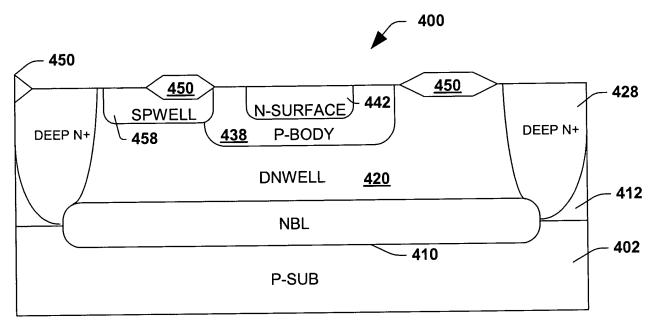


FIG. 25

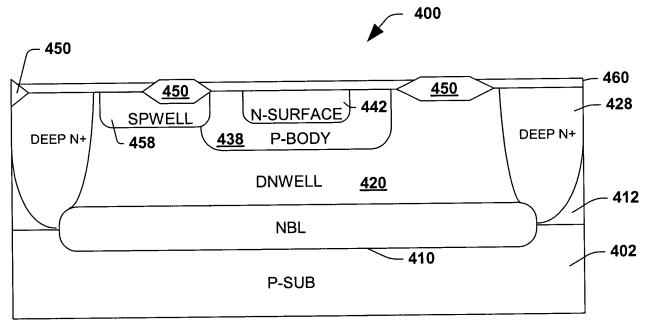


FIG. 26

TI-34843 14 of 15

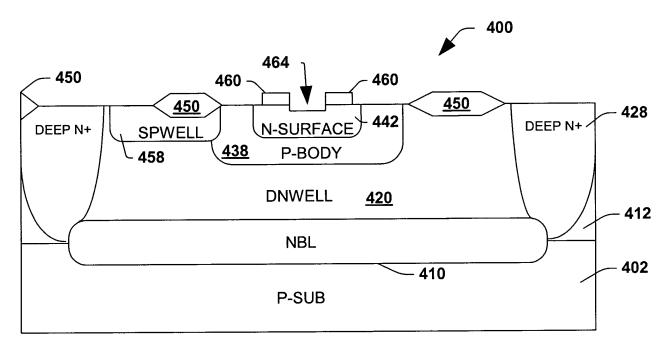


FIG. 27

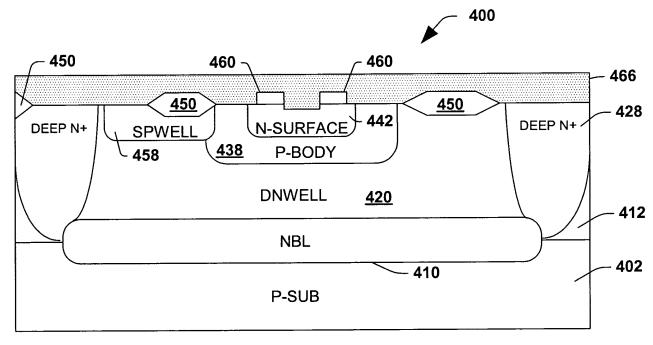
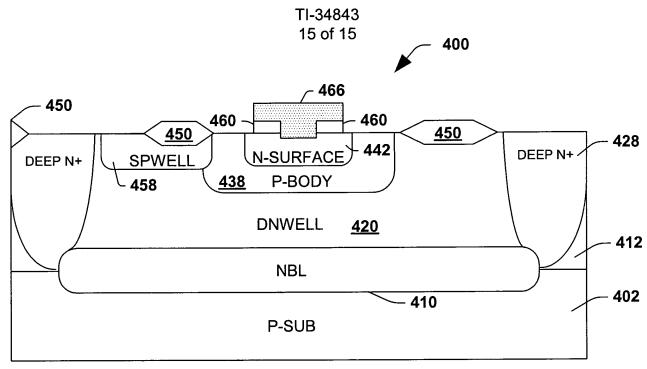


FIG. 28





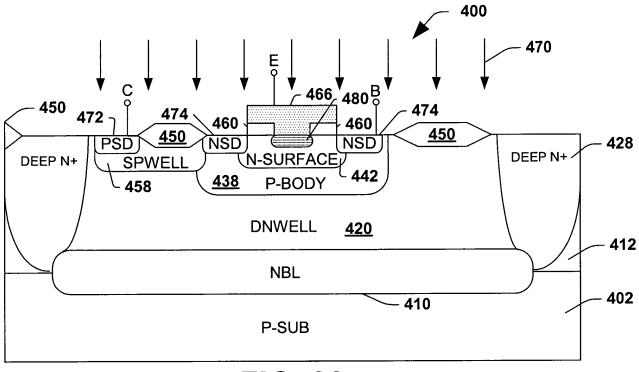


FIG. 30